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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,191

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Sheung Hee Park

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4285

7590

11/02/2004

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EXAMINER

HOANG, QUOC DINH

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,191	PARK ET AL.	
	Examiner	Art Unit	
	Quoc D Hoang	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,14,16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 2-5,7,8,15 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-8 and 14-20 in Paper No. 10/18//2004 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 recites the limitations "said first insulating layer" and "said first insulating layer" in line 2 and line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 6, 14, 16 and 18-20, as best understood, are rejected under 35 U.S. C. 102(e) as being anticipated by Lombardo et al., U.S. Pat No. 6,772,992 ("Lombardo").

Regarding claims 1 and 14, Lombardo teaches a floating gate transistor comprising: a source 4 (col. 3, lines 24-63 and Fig. 1); a drain 4 (col. 3, lines 24-63 and Fig. 1); a channel disposed between said source 4 and said drain 4 (col. 3, lines 24-63 and Fig. 1); a charge trapping region 6 disposed above said channel region (col. 3, lines 24-63 and Fig. 1); a first fin 5 disposed adjacent said charge trapping region 6 and above said source 4 (col. 3, lines 24-63 and Fig. 1); a first isolation layer disposed above said channel and said source 4 and below said charge trapping region 6 and said first fin 5 (col. 3, lines 24-63 and Fig. 1); a control gate 7 disposed above said charge trapping region 6 (col. 3, lines 24-63 and Fig. 1); and a second isolation layer disposed above said charge trapping region 6 and said first fin 5 and below said control gate 7 (col. 3, lines 24-63 and Fig. 1).

Regarding claims 6 and 16, Lombardo teaches a second fin 5 disposed adjacent said charge trapping region 6 and above said drain 4 (col. 3, lines 24-63 and Fig. 1); and said first isolation layer further disposed above said drain 4 and below said second fin 5 (col. 3, lines 24-63 and Fig. 1).

Regarding claims 18 and 19, Lombardo teaches wherein: said source 4 comprises n-doped semiconductor (col. 3, lines 24-63 and Fig. 1); said drain 4 comprises n-doped semiconductor (col. 3, lines 24-63 and Fig. 1); and said channel comprises p-doped semiconductor (col. 3, lines 24-63 and Fig. 1). Examiner takes an official note that it is obvious in the art of semiconductor device to have a p-doped semiconductor source/drain and n-doped semiconductor channel in order to make a N-type transistor device.

Regarding claim 20, Lombardo teaches the first isolation layer and the second isolation comprise a dielectric (col. 3, line 45).

Allowable Subject Matter

6. Claims 2-5, 7, 8, 15 and 17 are objected to as being dependent upon a rejected base claims 1 and clai 14, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 2-5, 7, 8, 15 and 17 are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claim, to teach wherein the first fin and the second fin comprise p-doped semiconductor.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc Hoang whose telephone number is (571) 272-1780. The examiner can normally be reached on Monday-Friday from 8.00 AM to 5.00 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone numbers of

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the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Quoc Hoang 
Patent examiner/AU 2818


David Nelms
Supervisory Patent Examiner
Technology Center 2800